

REMARKS

Status

Claims 17-36 are pending in the application. Claims 17, 18, 23, 25 and 30 have been amended. Reconsideration is respectfully requested.

Rejection Under 35 U.S.C. §103

Claims 17, 19-23, and 26-29 are rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 7,016,061 (“Hewitt”) in view of U.S. Patent No. 6,369,911 (“Hattori”), and further in view of U.S. Patent Application Publication No. 2002/0067509 (“Roylance”). Claims 30 and 31 are rejected under 35 U.S.C. §103(a) as being obvious over Hewitt in view of Roylance. Claim 36 is rejected under 35 U.S.C. §103(a) as being obvious over Hewitt, Roylance, and Hattori.

Claim 17 recites “combining, by the host machine, the printer ready data with print engine control commands operable to control a print engine to create interim data having a second number of bits per plane per pixel, the second number of bits being lower than the first number of bits and higher than one bit per plane per pixel.”

Hewitt describes balancing the processing load between a printer and a host computer over time. *See* abstract. The printing process is monitored to determine whether the processing of the print data for next print job should be performed on the host computer or on the printer in order to maximize the printing speed. *Id.* In all embodiments of Hewitt, the processing for any print job or page occurs either on the host computer or on the printer. Therefore, the load is balanced over time spanning a series of print jobs or pages. Hewitt does not describe balancing the processing load for a single processing task between the host computer and the printer.

Hewitt describes “JetReady” or hardware-ready bits (HRB) file that can be directly fed into a hardware imaging pipeline. *See* col. 4, lines 1-10. The HRB file is fed directly to the print engine “without the need to be reprocessed by the formatter.” *See* col. 5, lines 16-17. Data that can be fed directly to the print engine has only a single bit per plane per pixel. The HRB file is not interim data and does not include a second number of bits per plane per pixel where the second number of bits is higher than one bit per plane per pixel.

Hewitt also describes a second embodiment where the imaging device formatter includes “sufficient logic to receive and process a print job in HRB format and pass the HRB file to the print engine.” *See* col. 5, lines 20-24. However, even in the second embodiment of Hewitt, the HRB file generated by the host machine includes only a single bit per plane per pixel. Any data generated from processing on the imaging device formatter is not combined by the host machine. Thus, the second embodiment also fails to teach “combining, by the host machine, the printer ready data with print engine control commands operable to control a print engine to create interim data having a second number of bits per plane per pixel, the second number of bits being lower than the first number of bits and higher than one bit per plane per pixel.”

Hattori does not fill in the gaps left by Hewitt. Hattori describes a printer including a pulse generating circuit. *See* Hattori, col. 3, line 41-49. Hattori is silent regarding any process on the host computer, and accordingly, fails to teach or suggest “combining, by the host machine, the printer ready data with print engine control commands operable to control a print engine to create interim data having a second number of bits per plane per pixel, the second number of bits being lower than the first number of bits and higher than one bit per plane per pixel.”

Roylance also does not fill in the gaps left by Hewitt. Roylance describes a resolution enhancement procedure in a laser printer. Roylance is completely silent regarding image processing in a host machine. Roylance describes halftone image enhancement performed by circuitry 206. *See* [0042]. However, all of the enhancement procedures in Roylance are performed in a laser printer. *See* [0028]-[0030].

Therefore, Roylance does not teach or suggest “combining, by the host machine, the printer ready data with print engine control commands operable to control a print engine to create interim data having a second number of bits per plane per pixel, the second number of bits being lower than the first number of bits and higher than one bit per plane per pixel.”

Accordingly, none of Hewitt, Hattori, Roylance, and combinations thereof teaches or suggests all of the subject matter of claim 17. For at least these reasons, Applicants request that the rejection of claim 17 be withdrawn. Further, the rejections of claims 18-22 should be withdrawn because, at a minimum claims 18-22 depend from claim 17.

Claim 23 is directed to a printing system including a host machine and a printing device, the printing system. Claim 23 recites:

- a first software application on the host machine configured to generate page data having a first number of bits per plane per pixel;
- a second software application on the host machine examining the page data in groups of at least two adjacent pixels;
- a print data processor in the host machine configured to render printer ready data based on the examination of the page data and configured to combine the printer ready data with print engine control commands operable to control a print engine to create interim data having a second number of bits per plane per pixel, the second number of bits being lower than the first number of bits and higher than one bit per plane per pixel;
- a first communication device in the host machine configured to transfer the interim data;
- a second communication device in the printing device configured to receive the interim data;
- a pulse code generator in the printing device configured to receive the interim data and configured to generate a pulse code corresponding to the interim data; and
- a print engine configured to receive the pulse code and transform the pulse code to a hardcopy image.

Hewitt describes balancing the processing load between a host computer and a printer. Based on the printing process conditions, monitored in real time, the control module determines the most efficient location for a print job or a page to be processed. *See* col. 5, lines 25-39. Hewitt's host machine does not create interim data having a second number of bits per plane per pixel, the second number of bits being lower than the first number of bits and higher than one bit per plane per pixel, as recited by claim 23.

Hattori and Roylance do not fill in the gaps left by Hewitt. As discussed above, neither Hattori nor Roylance describe host based processing or creating interim data. Therefore none of Hewitt, Hattori, Roylance, and combinations thereof teaches or suggests all of the features of claim 23.

For at least these reasons, Applicants request that the rejection of claim 23 be withdrawn. Further, the rejections of claims 24-29 should be withdrawn because, at a minimum claims 24-29 depend from claim 23.

Claim 30 recites combining, by the host machine utilizing the at least one processor, the printer ready data with print engine control commands operable to control a print engine to create interim data having a second number of bits per plane per pixel, the second number of bits

being lower than that the first number of bits and higher than one bit per plane per pixel, compressing, using a compression algorithm, the interim data in the host machine utilizing the at least one processor; and transferring the compressed interim data to a printing device.

For at least the reasons discussed above, none of Hewitt, Roylance or combinations thereof teaches or suggests all of the features of claim 30. Therefore, Applicants respectfully request that the rejections of independent claims 30 and dependent claims 31-34 be withdrawn.

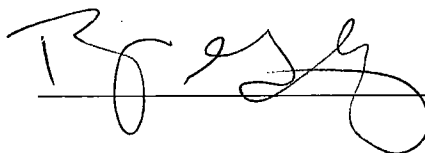
Claim 24 is rejected under 35 U.S.C. §103(a) as being obvious over Hewitt, Hattori, Roylance, and U.S. Patent No. 5,031, 053 (“Chazmas”). Claims 18 and 25 are rejected under 35 U.S.C. §103(a) as being obvious over Hewitt, Hattori, Roylance, and U.S. Patent No. 5,828,361 (“Gibson”). Claims 32-34 are rejected under 35 U.S.C. §103(a) as being obvious over Hewitt, Roylance, Hattori and further in view of U.S. Patent No. 5,915,079 (“Vondran”). Claim 35 is rejected under 35 U.S.C. §103(a) as being obvious over Hewitt, Roylance, and Vondran.

The Chazmas, Gibson, and Vondron references were only relied upon for the rejection of dependent claims. Because the dependent claims are allowable at least because of their dependency from an allowable independent claim, a detailed discussion of the Chazmas, Gibson, and Vondron references is omitted. However, Applicants submit that the Chazmas, Gibson, and Vondron references do not address the deficiencies of Hewitt, Hattori, and Roylance, and, in addition, that the dependent claims are patentable in their own right.

Conclusion

In view of the remarks above, Applicants respectfully submit that all of the pending claims are in condition for allowance and seek an early allowance thereof. If the Examiner is unable to allow the application in the next Office Action and believes that an interview would be helpful to resolve any remaining issues, the Examiner is respectfully requested to contact the undersigned at (312) 840-3225.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Ryan Gleitz', written over a horizontal line.

Ryan Gleitz
Attorney for Applicants
Registration No. 62,164

BRINKS HOFER
GILSON & LIONE
P.O. Box 10395
Chicago, Illinois 60610
(312) 321-4200

Dated: April 7, 2011